

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/01310

A. CLASSIFICATION OF SUBJECT MATTERInt. Cl. ⁷: C07K 14/475

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

ELECTRONIC DATABASES SEE BELOW

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAS Online databases: WPIDS Medline CA Biosis. Keywords: extracellular epitope n-terminal and similar, antibodies and immunoglobulins, 3-dimensional and similar

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | F XU et al. Antibody-Induced Growth Inhibition is Mediated Through Immunochemically and Functionally Distinct Epitopes on the Extracellular Domain of the <i>c-erbB02</i> (HER-2/ <i>neu</i>) Gene Product p185. International Journal of Cancer. Vol. 53, 1993, pp401-408. See whole document. | 15-24, 43-46 |
| X | R M NEVE et al. Biological Effects of anti-ErbB2 Single Chain Antibodies Selected for Internalizing Function. Biochemical and Biophysical Research Communications. Vol. 280, 2001, pp274-279. See whole document. | 15-24, 43-46 |
| X | F CENTIS et al. p185 HER2/ <i>neu</i> Epitope Mapping with Murine Monoclonal Antibodies. Hybridoma. Vol. 11, no. 3, 1992, pp 267-276. See whole document. | 15-24, 43-46 |

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

| | |
|---|--|
| * Special categories of cited documents: | |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "E" earlier application or patent but published on or after the international filing date | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O" document referring to an oral disclosure, use, exhibition or other means | "&" document member of the same patent family |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search
18 November 2003

Date of mailing of the international search report 26 NOV 2003

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustalia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

STUART BARROW

Telephone No : (02) 6283 2284

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/01310

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|--------------|---|-----------------------|
| X | US 5968511 (AKITA et al). October 19, 1999. See whole document. | 15-22, 43-46 |
| X | WO 99/31140 (GENENTECH, INC). 24 June 1999. See whole document. | 15-22, 43-46 |
| X | WO 01/15730 (GENENTECH, INC). 8 March 2001. See whole document. | 15-22, 43-46 |
| X | E ENAN et al. Activation of c-Neu Tyrosine Kinase by o,p'-DDT and β -HCH in Cell-Free and Intact Cell Preparations from MCF-7 Human Breast Cancer Cells. Journal of Biochemical and Molecular Toxicology. Vol. 12, no. 2, 1998, pp83-92. See whole document. | 15-22, 43-46 |
| X | X LI et al. Single-chain Antibody-mediated Gene Delivery into ErbB2-positive Human Breast Cancer Cells. Cancer Gene Therapy. Vol. 8, no. 8, 2001, pp555-565. See whole document. | 15-22, 43-46 |
| X | I STANCOVSKI et al. Mechanistic Aspects of the Opposing Effects of Monoclonal Antibodies to the ERBB2 Receptor on Tumor Growth. Proceedings of the National Academy of Science, USA. Vol. 88, 1991, pp8691-8695. See whole document. | 15-22, 43-46 |
| P, X | T P J GARRETT et al. The Crystal Structure of a Truncated ErbB2 Ectodomain Reveals an Active Conformation, Poised to Interact with Other ErbB Receptors. Molecular Cell. Vol. 11, 2003, pp495-505. See whole document. | 1-46 |
| P, X P, A | Y L YIP et al. Structural Analysis of the ErbB-2 Receptor Using Monoclonal Antibodies: Implications for Receptor Signalling. International Journal of Cancer. Vol. 104, 2003, pp303-309. See whole document. See whole document. | 15-22, 43-46 1-46 |
| A | J SINGH et al. Structure-Based Design of a Potent, Selective, and Irreversible Inhibitor of the Catalytic Domain of the erbB Receptor Subfamily of Protein Tyrosine Kinases. Journal of Medicinal Chemistry. Vol. 40, 1997, pp1130-1135. See whole document. | 1-42, 46 |

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/01310

Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos : 40
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
See supplemental sheet.
3. ☐ Claims Nos :
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/01310

Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: I

Claim 40 relates to compositions comprising compounds that go beyond the disclosure of the specification. While methods of identifying the compounds suitable for use in such a composition, the compounds themselves go beyond the scope of the invention. The claims have been searched as far as they relate to the inventive concept of the application.

Note also that the word 'matching' in claim 15 is ambiguous. It has been interpreted as meaning 'complementary.'

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU03/01310

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent Document Cited in Search Report | | | | Patent Family Member | | | |
|---|---------|----|------------|----------------------|------------|----|---------|
| US | 5968511 | US | 2002064805 | | | | |
| WO | 9931140 | AU | 19081/99 | BR | 9815363 | CA | 2311409 |
| | | EP | 1037926 | NO | 20002957 | NZ | 504597 |
| | | US | 2003147884 | US | 2003170234 | ZA | 9811162 |
| WO | 0115730 | AU | 70752/00 | BR | 0013814 | CA | 2382100 |
| | | EP | 1210115 | HU | 0202523 | US | 6627196 |
| END OF ANNEX | | | | | | | |